## Practice Problems: Drawing and Naming Hydrocarbons

### Alkanes

1. Name the following alkanes
   1. 
   2. 
   3. 
   4. 
   5. 
2. Identify any errors in the structures by drawing them. Rename them correctly
   1. 2-thylpropane
   2. 2,2,2-trimethylethane
   3. 2-ethyl-2,4,4-trimethylpentane
3. Name the following compounds
   1. 
   2. 
   3. 
   4. 
4. Draw the condensed and line structural diagram of the following alkanes
   1. 2-methylbutane
   2. 3-ethyl-3-methylhexane
   3. 4-(1,1-dimethylethyl)nonane
   4. 2-methylpentane
   5. 3,3,4-triethylnonane
   6. 3,3,4,4,-tetramethyldecane

### Alkenes

1. Name each of the following alkenes
   1. 
   2. 
   3. 
   4. 
   5. 
2. Identify the errors in each structure by drawing it. Rename the structure correctly.
   1. But-3-ene
   2. 2,3-dimethylhept-4-ene
   3. 3-ethyl-4-methlhex-4-ene
   4. 5-methyl-2-propylhex-3-ene
3. Name the following compounds:
   1. 
   2. 
   3. 
   4. 
4. Draw the condensed structural and line structural formulas for each of the following alkenes
   1. Pent-2-ene
   2. 3-propylhept-2-ene
   3. 4,4-dimethylhex-2-ene
   4. 4-ethyl-2,5-dimethyloct-3-ene
   5. 2-methylbut-1-ene
   6. 4-ethyl-4,5-dimethylhex-1-ene

### Alkynes

1. Name the following alkynes
   1. 
   2. 
   3. 
   4. 
2. Draw the condensed structural diagrams and line structural diagrams of the following molecules
   1. But-2-yne
   2. 4,5-dimethylhe-1-yne
   3. 4-ethyl-4-methylhept-2-yne
   4. 2,5,7-trimethylnon-3-yne
3. Identify the errors found in each name by drawing the structure, then name each structure correctly
   1. 3-methylprop-1-yne
   2. But-3-yne
   3. 2-methylpent-3-yne
   4. 2-methyl-4-propyl-4-ethyhex-5-yne

### Cyclic Hydrocarbons

1. Name the following hydrocarbons
   1. 
   2. 
   3. 
   4. 
   5. 
   6. 
   7. 
   8. 
2. Draw the condensed and line structural formulas for the following compounds
   1. Methylcyclobutane
   2. 3-methylcyclopentane
   3. 2-ethyl-3-propylcyclohexene
   4. 2-cyclobutylpentane

### Aromatic Hydrocarbons

1. Name the following aromatic hydrocarbons
   1. 
   2. 
   3. 
   4. 
2. Draw the condensed and line structures for each of the following molecules
   1. 1,2,-diethyl-4-methyl-2-propylbenzene
   2. 1,4-dimethylbenzene
   3. 1-ethyl-3-propylbenzene
   4. 1,2-diethyl-4,5-dimethylbenzene
   5. 2-phenyl-5-propyloctane